

REMARKS

The Office Action dated May 11, 2004 has been carefully reviewed. Claims 1-17 and 19-31 are pending in this application. By this amendment, claim 1 has been amended. Claims 2-17 and 19-31 are unchanged by this amendment.

35 U.S.C. § 102(e) Rejections

Claims 1, 5, 6, 9, 13, 14, 17, 20, and 26-31 were rejected under 35 U.S.C. § 102(e) over U.S. Patent Application Publication No. 2001/0037064 to Shahidi (hereinafter "Shadidi"). Applicants respectfully traverse this rejection. Reconsideration of claims 1, 5, 6, 9, 13, 14, 17, 20, and 26-31 is respectfully requested.

Discussion Re: Patentability of Claim 1

Claim 1 is as follows:

1. A method of operating a surgical burr during performance of an orthopaedic procedure, the method comprising the steps of:
 - determining position of the surgical burr and generating an electronic output signal in response thereto,
 - generating a cue to a user of the surgical burr in response to generation of the electronic output signal, and
 - adjusting operation of the surgical burr in response to generation of the electronic output signal.

The surgical tracking system disclosed in Shahidi does not perform each of the above limitations recited in Applicants' claim 1. For example, the surgical tracking system disclosed in Shahidi does not perform the step of "adjusting operation of the surgical burr in response to generation of the electronic output signal". Indeed, although Shahidi discloses, as pointed out by the Examiner, that the tracked medical instrument (i.e., the instrument 12) may include a "drill" (see paragraph 28, last line), there is absolutely no further teaching in Shahidi of the control of such a drill. Even if one could equate the "drill" disclosed in Shahidi with the "surgical burr" claimed in claim 1, there is no teaching in Shahidi of the claimed method of operating the surgical burr of Applicant's claim 1. For example, amongst other things, there is no teaching in Shahidi of the step of "adjusting operation of the surgical burr in response to generation of the

electronic output signal”, with the electronic control signal having been generated in response to “determining position of the surgical burr”. There is no such teaching in Shahidi relating to its “drill”. Indeed, although Shahidi indicates that the instrument tracked may be a “drill”, it is completely silent on the operation of such a drill, and certainly does not disclose adjusting operation of such a drill based upon its determined position.

It is axiomatic that anticipation of a claim under 35 U.S.C. § 102 is proper only if the prior art reference discloses each and every element of the claim. Shahidi does not disclose each and every element of Applicant’s claim 1. As a result, Shahidi does not anticipate Applicant’s claim 1.

If the rejection of claim 1 is maintained after considering the remarks presented herein, the Examiner is respectfully requested to specifically indicate where each limitation of claim 1 is disclosed in Shahidi (e.g. by line and column number).

Discussion Re: Patentability of Claims 5, 6, 26, and 27

Each of claims 5, 6, 26, and 27 includes claim 1 as a base claim. As a result, each of claims 5, 6, 26, and 27 is allowable for the reasons hereinbefore discussed with regard to claim 1. Moreover, each of claims 5, 6, 26, and 27 includes additional limitations which are not disclosed in Shahidi. For example, claim 6 recites “determining position of the surgical burr relative to a predetermined boundary around an anatomical feature.” Applicant traverses the Examiner’s unsupported statement that “a boundary around an anatomical feature is inherently related thereto”. Indeed, there is absolutely no teaching in Shahidi which describes the use of a boundary, much less the use of a boundary in the manner described in claim 6. Applicant requests that the Examiner explain how the use of such a boundary is inherent to the system of Shahidi in light of its complete absence from the disclosure of Shahidi.

Moreover, claims 26 and 27 recite the limitation of generating a visual or audio cue, respectively. Note that such a generating step is performed in response to generation of the electronic output signal (which is generated in response to a determined position of the surgical burr). The Examiner states that by “adjusting the position of the burr, a visual cue is signaled to the user.” Even if this were the case (which Applicant

does not believe to be true), such a “visual cue” is clearly not being generated in response to generation of an electronic output signal. Similarly, the Examiner states that “as the burr passes from tissue of one type to another (i.e. from soft tissue to hard tissue) the sound of the burr will inherently change...” Presumably, the Examiner is purporting that such a change in sound is an audio cue. Again, even if this were the case (which Applicant does not believe to be true), such an “audio cue” is clearly not being generated in response to generation of an electronic output signal.

Discussion Re: Patentability of Claim 9

The discussion relating to the patentability of claim 1 is relevant to the patentability of claim 9. For example, claim 9 includes the limitation “(b) adjust operation of the surgical burr in response to generation of the output signal”. As a result, claim 9 is allowable for the reasons hereinbefore discussed with regard to claim 1.

Discussion Re: Patentability of Claims 13, 14, 28, and 29

Each of claims 13, 14, 28, and 29 includes claim 9 as a base claim. As a result, each of claims 13, 14, 28, and 29 is allowable for the reasons hereinbefore discussed with regard to claim 9. Moreover, the discussion relating to the patentability of claims 5, 6, 26, and 27 is relevant to the patentability of claims 13, 14, 28, and 29.

Discussion Re: Patentability of Claim 17

The discussion relating to the patentability of claim 1 is relevant to the patentability of claim 17. For example, claim 17 includes the limitation “a controller configured to adjust operation of the surgical burr based on output from the surgical navigation system”. As discussed above in regard to claim 1, there is absolutely no teaching in Shahidi related to the control of a surgical burr, much less the control of a surgical burr based on output from a surgical navigation system. As a result, claim 17 is allowable for the reasons hereinbefore discussed with regard to claim 1.

Discussion Re: Patentability of Claims 20, 30, and 31

Each of claims 20, 30, and 31 includes claim 17 as a base claim. As a result, each of claims 20, 30, and 31 is allowable for the reasons hereinbefore discussed with regard to claim 17. Moreover, the discussion relating to the patentability of claims 5, 6, 26, and 27 is relevant to the patentability of claims 20, 30, and 31.

35 U.S.C. § 103 Rejection of Claims 2-4, 7, 8, 10-12, 15, 16, 19, and 21-25

Claims 2-4, 7, 8, 10-12, 15, 16, 19, and 21-25 were rejected under 35 U.S.C. § 103 as being unpatentable over Shahidi in view of U.S. Patent No. 5,269,785 issued to Bonutti (hereinafter "Bonutti"). Each of claims 2-4, 7, 8, 10-12, 15, 16, 19, and 21-25 is dependent on one of independent claims 1, 9, and 17 and is allowable for at least the reasons hereinbefore discussed in regard thereto.

35 U.S.C. § 103 Rejection of Claims 1, 2, 5, 6, 20, and 21

Claims 1, 2, 5, 6, 20, and 21 were rejected under 35 U.S.C. § 103 as being unpatentable over Bonutti. It is unclear the nature of the rejection relating to these claims. It appears that the Examiner is equating the steps recited in claims 1, 2, 5, 6, 20, and 21 with a number of mental steps performed by an operator of the manually controlled burr disclosed in Bonutti. Although one skilled in the art would understand from a review of Applicant's specification that claims 1, 2, 5, 6, 20, and 21 relate to machine implemented steps, claim 1 has been amended to recite "an electronic output signal" to clarify the same.

To the extent that the Examiner maintains this rejection of claims 1, 2, 5, 6, 20, and 21 in light the amendment thereto to clarify the machine implemented nature of the claimed invention, Applicant respectfully requests that the Examiner identify a legally sufficient teaching, motivation, or suggestion that supports a modification of Bonutti in a manner which attempts to arrive at the invention of Applicant's claims.

Conclusion

In view of the foregoing amendments and remarks, it is submitted that this application is in a condition for allowance. Action to that end is hereby solicited.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees be charged, or any overpayment in fees be credited, to the Account of Barnes & Thornburg, Deposit Account No. 10-0435 with reference to file 265280-73424.

Respectfully submitted,

BARNES & THORNBURG



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